

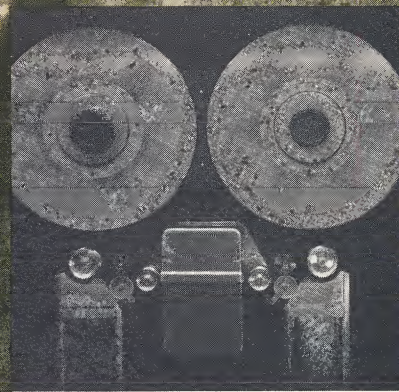
System Development Corporation

An invitation from the System Development Corporation to ambitious scientists and engineers who wish to advance

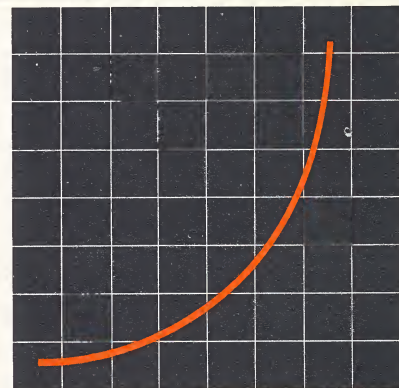
themselves and their professional stature by doing challenging work with control systems based on digital computers.



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YOUR OPPORTUNITIES: Formed in 1957, System Development Corporation employs more than 3,000 people and is growing at the rate of 600 persons a year. It will probably continue to expand at this rate in the foreseeable future, thus offering unique opportunities for advancement to psychologists, engineers, computer programmers, and other scientists, as well as administrative personnel. The increasing use of digital computers in business, science, education, medicine, and defense ensures the company's growth and promises exciting developments and challenges for all who work here.



THE SPECIFIC AND PRIMARY PURPOSES

FOR WHICH THE CORPORATION IS FORMED

ARE TO RECEIVE AND ADMINISTER FUNDS

AND PROPERTY EXCLUSIVELY FOR

SCIENTIFIC, EDUCATIONAL, AND CHARITABLE PURPOSES

FOR THE PUBLIC WELFARE AND SECURITY

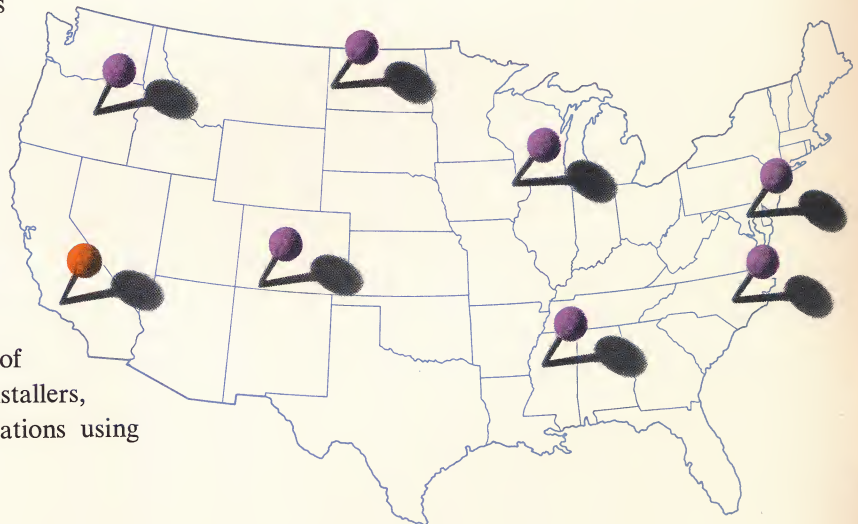
OF THE UNITED STATES OF AMERICA . . .

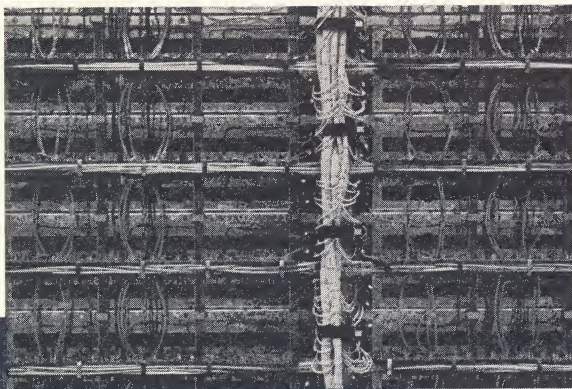
—Articles of Incorporation

INTRODUCING OURSELVES: We'd like you to know more about us — who we are, where we're located, what we do, how we're organized, what's embodied in our system and work philosophy. Most important, we'd like to show you how your talents and skills can fit into our organization.

WHO WE ARE: System Development Corporation is an independent, non-profit research and development corporation devoted to the public interest. It was originally the System Development Division of the RAND Corporation. Our overall policy and activities are established by a Board of Trustees composed of leaders in science, industry, and public life.

WHERE WE ARE: Our ultra-modern headquarters is located in Santa Monica, California, two miles from the Pacific Ocean and 13 miles west of downtown Los Angeles. It covers 750,000 square feet and includes one of the largest and most flexible computing facilities in the world. Our other major facility, the SACCS (Strategic Air Command Control System) Division, is headquartered at Lodi, New Jersey, where it is engaged in developing a control system for SAC. Many of our people also work in the field as advisors, installers, consultants, and programmers with organizations using digital computers.





SOCIOLOGY

PSYCHOLOGY

ENGINEERING

MATHEMATICS

PHYSICS

COMMUNICATIONS

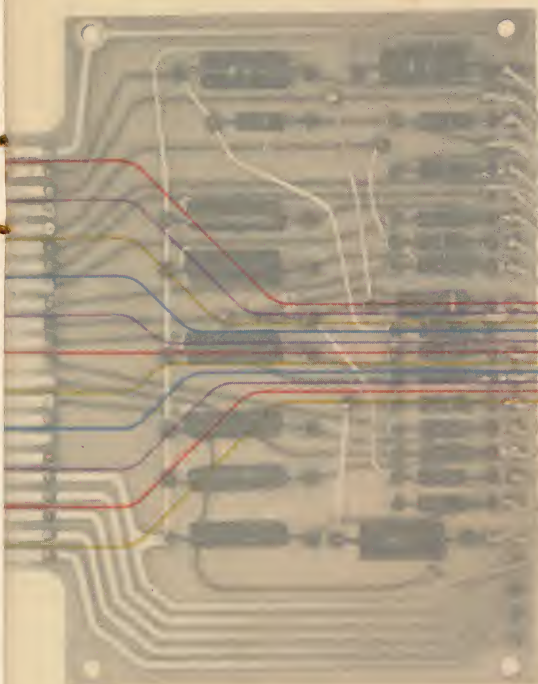
ADMINISTRATION



WHAT WE DO: The development of large-scale man-machine systems based on digital computers is the unique specialty of our firm. At SDC, we combine many branches of technical and management knowledge in an interdisciplinary team approach to the development of control systems.

The function of these systems is to enable a man or small group of men to control vast operations involving a complex of data-collection devices, data-transmission techniques, high-speed computers, display equipment, and people. We have evolved a specialized technology to match control systems to their users' requirements and to exploit the power of data-processing machines. We are also continually seeking new ways to make the most effective use of human beings functioning within such systems, for regardless of the degree of self-control demonstrated by any of man's mechanical creations, the ultimate control rests with man.

A good example of our work in this field is our development, production, installation, and continual improvement of the SAGE (Semi-automatic Ground Environment) Air Defense computer program and the adaptation of this program to the environments of more than 30 SAGE Direction Centers and Combat Centers throughout the United States. The computer programs that we write for the SAGE System operate in "real time," dealing with new information as it comes in and acting to control



TECHNICAL PUBLICATION

SYSTEM TRAINING

OPERATIONS RESEARCH

COMPUTER PROGRAMMING

SYSTEM RESEARCH

SYSTEM DESCRIPTION

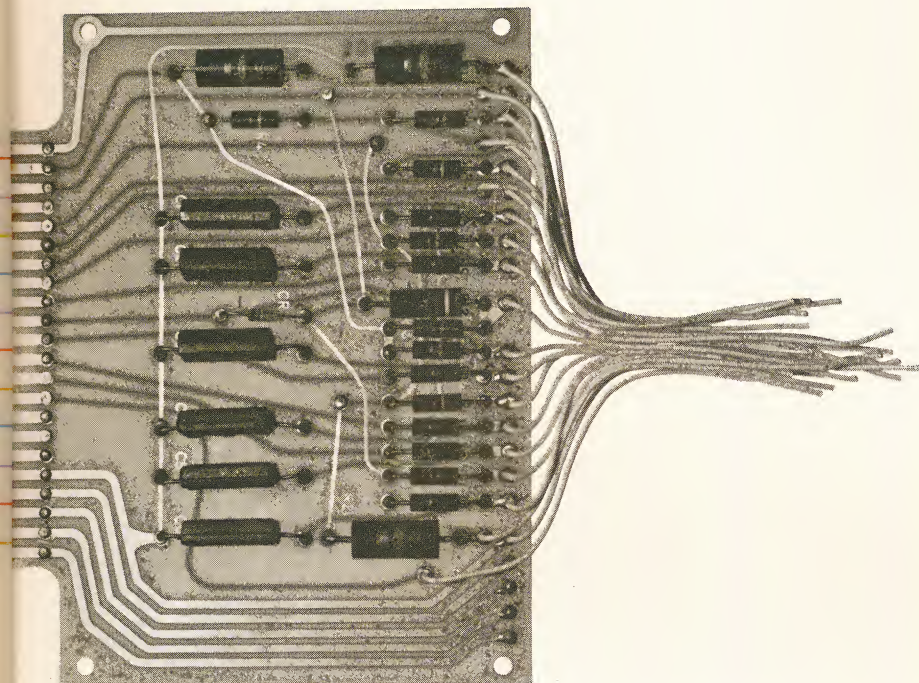
DATA PROCESSING

a dynamic environment. They are the most extensive real-time computer programs ever written.

One of the most advanced control systems in the modern world, SAGE is a highly automated system that uses a network of high-speed electronic digital computers to provide the speed and accuracy necessary for air defense. Development, design, preparation, testing, and installation of these huge, interleaved computer programs is an undertaking without precedent in the history of digital computing.

Equally important is our System Training Program. In this, we design and produce for SAGE and Manual air-defense systems of the North American Air Defense Command the materials for system training exercises that simulate for air defense personnel the conditions of emergency situations, such as air attacks, with which a control system may have to deal. Participation in these simulated exercises increases system efficiency and the understanding of system problems.

In addition, part of our work is self-sponsored research in business management control systems, in the possible application of computing machines to classroom instruction, and in medical data processing, as well as other fields where the tremendous capacities and versatility of digital computers can be employed to benefit mankind.



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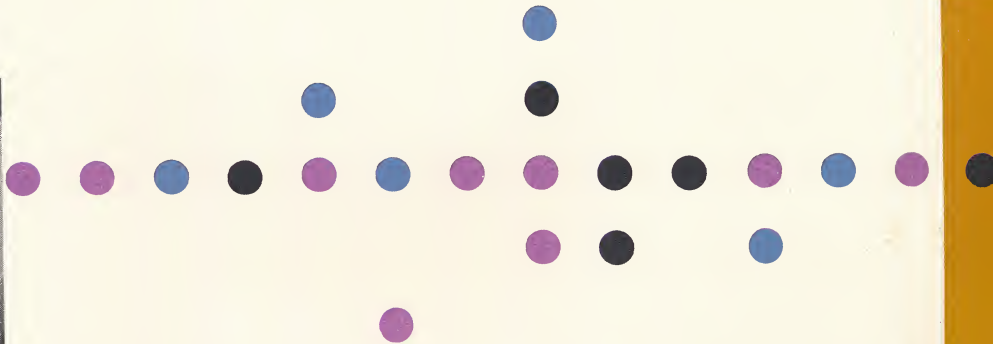
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OUR SYSTEM PHILOSOPHY: The more complex modern society becomes, the more subtle, complex, and far-reaching are the relationships of man to man and event to event. Our individual choices, no matter how free, place us in patterns or systems—in some of which we participate at random, while in others we are closely integrated.

Modern technology illustrates this trend dramatically, in that every member of a given system must not only serve appropriately in a discrete task, but must also perform compatibly with every other member of the system. The development of man-machine systems of optimum integration and efficiency is the objective of System Development Corporation.

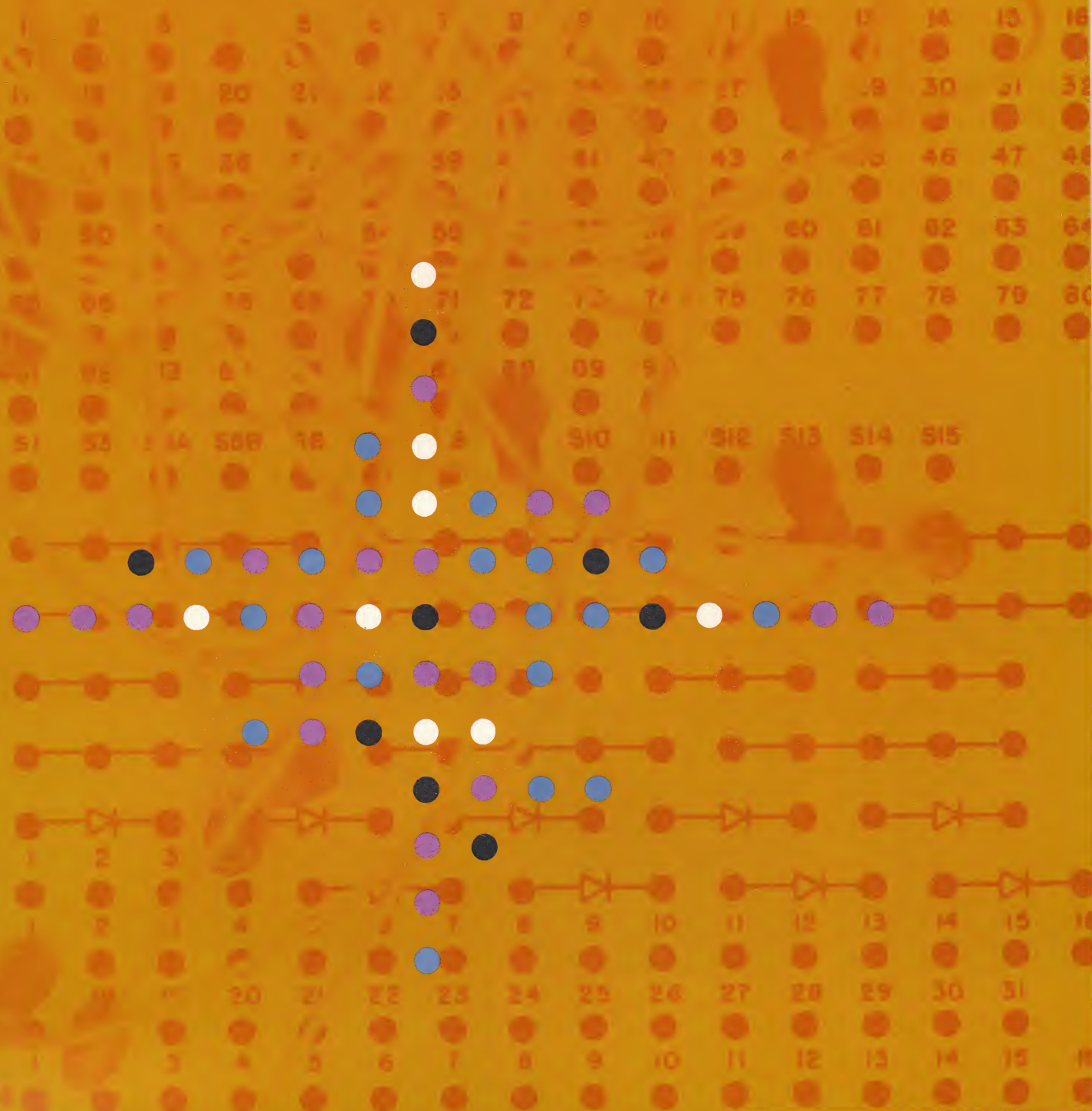
High-speed electronic digital computers are essential elements of these systems. Their tremendous speed, capacity, and accuracy enable them to handle huge masses of information in the short amount of time that may be available for action. Human beings are, however, still essential elements of most such large, modern control systems. At many levels, they are needed to perform those functions requiring judgment, imagination, or intuition that machines cannot presently be made to perform.

We at SDC consider a system as basically these two elements—men and machines—acting together to solve specific problems or to arrive at a predetermined goal. The combined efforts of our professional staff are aimed at creating from these two elements the most effective and practical organization of a given system.



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OUR ORGANIZATION:

Our technical staff is divided
into four major professional specialties:

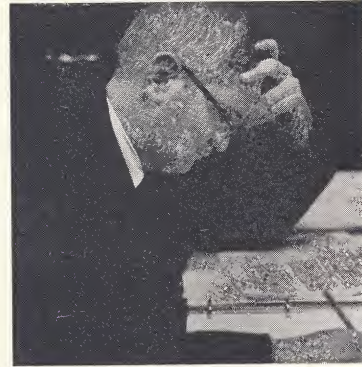
Data Processing, Engineering,
Human Factors, and
Operations and Management Research.

The following breakdown will give you
some idea of their activities and the
opportunities that they offer you.



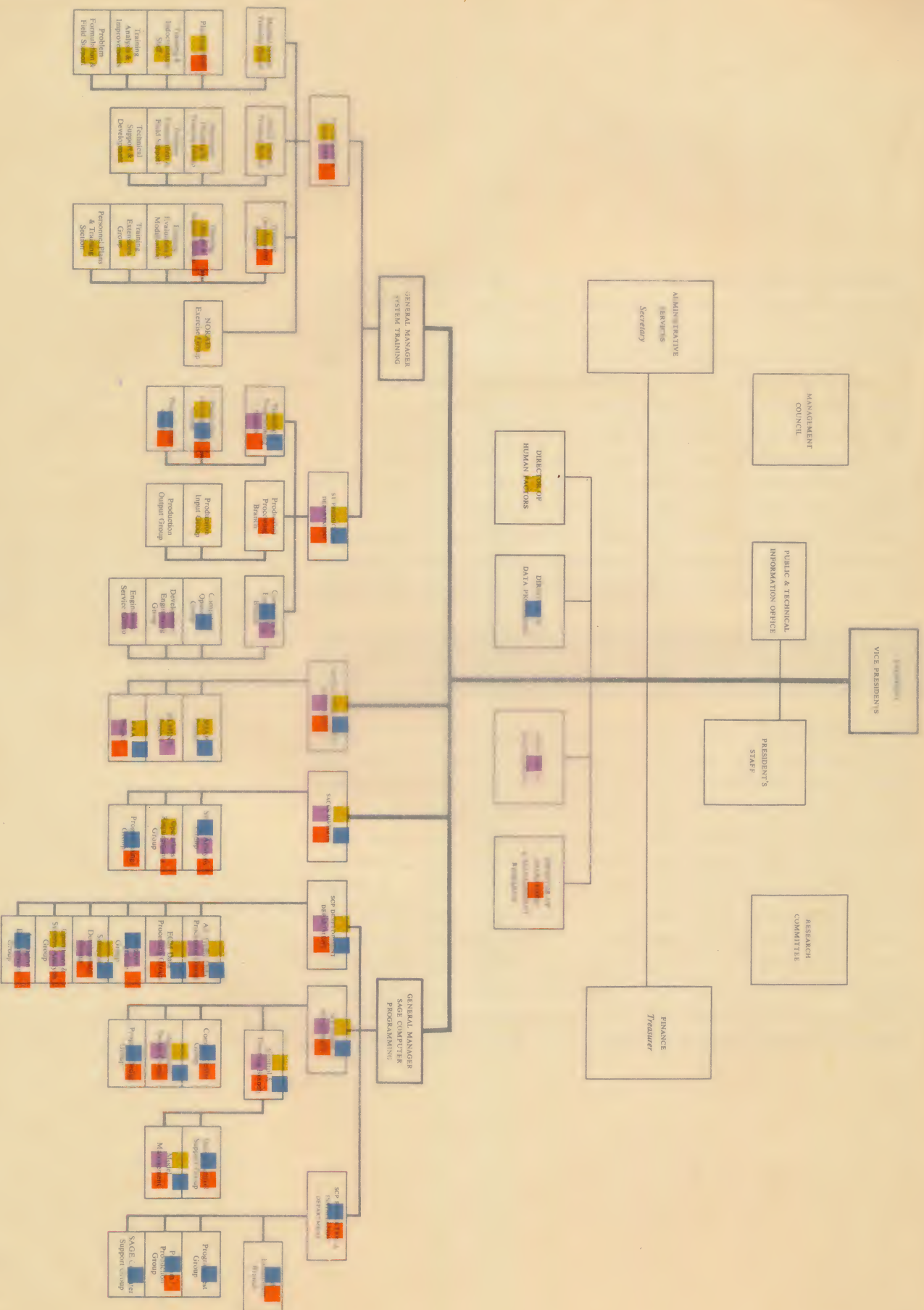
DATA PROCESSING

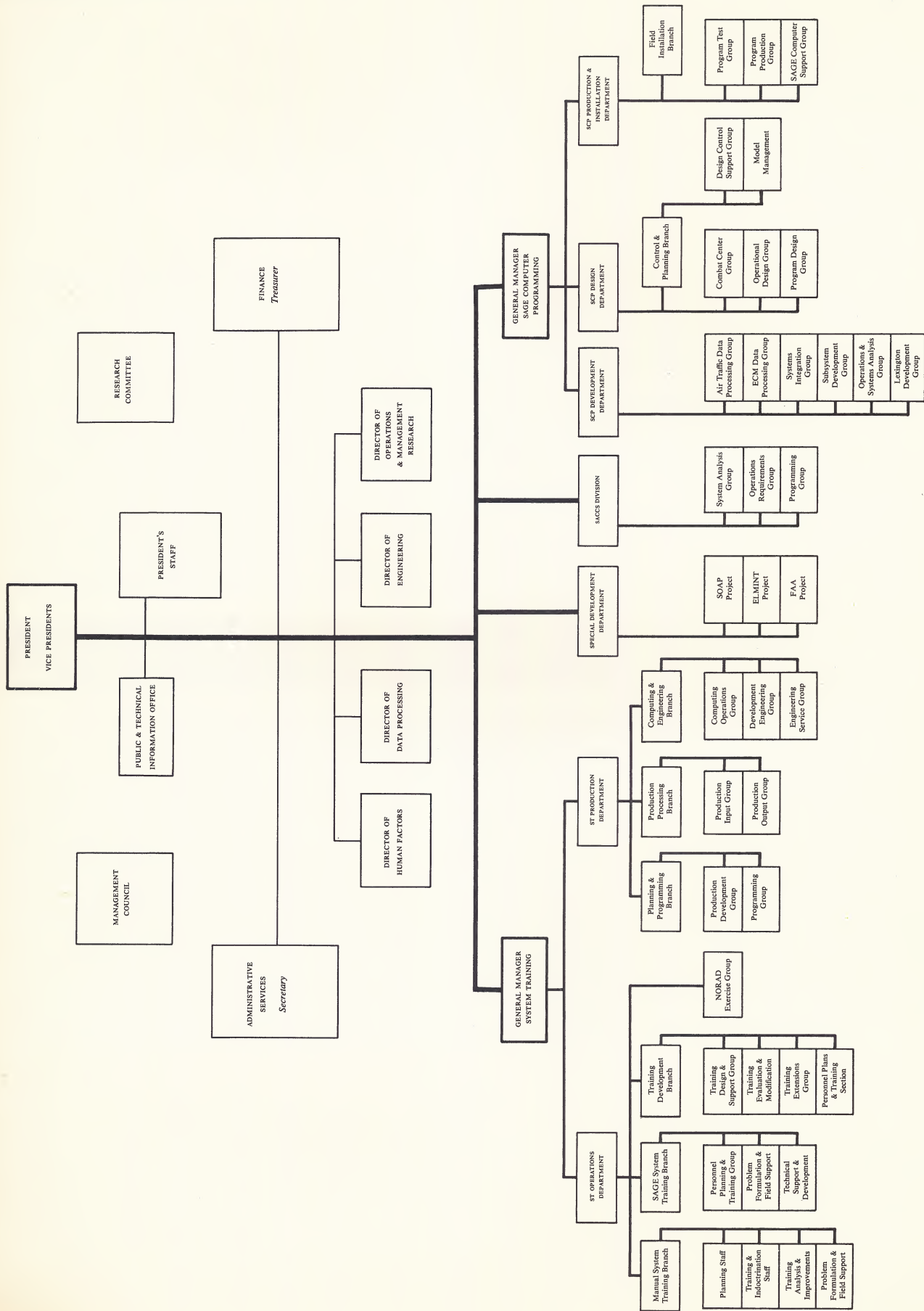
ENGINEERING



HUMAN FACTORS

OPERATIONS
AND MANAGEMENT
RESEARCH





DATA PROCESSING: In this field we employ the largest staff of computer programmers in the world to conduct long-range studies of the best uses of computers and their associated equipment. We are also responsible for the computer programs themselves, as well as research in such areas as automatic data processing and mathematical and logical symbology. Specialists include experienced senior programmers with a demonstrated ability to design and develop complex-system programs; programmers experienced in scientific or logical data processing and familiar with digital computers and data-processing systems; and programmer trainees with a scientific or mathematical background. Our programmers often assume significant responsibility in the design and development of command control systems. As elsewhere in SDC, specialists are not necessarily confined to one field but may — and frequently do — operate in related areas.

HUMAN FACTORS: Our specialists in this growing field study the human elements of control systems and strive to find the optimum balance between men and machine capabilities. They also conduct basic research on generalized systems in a new human factors laboratory. In addition, they study system environment and develop training programs that help men perform effectively in these environments. In sum, Human Factors research at SDC seeks to discover the principles of human behavior that affect the design, training for, and operation of electronic data-processing systems. Our emphasis on the human element of system operation has led to the employment of one of the largest staffs of behavioral scientists in America. Like our engineers, they represent a wide variety of training and experience — in education, communications, philosophy, sociology, human engineering, and social, clinical, and experimental psychology.

ENGINEERING: Engineers at SDC, as individuals, have complementary backgrounds that contribute to the formation of a well-balanced team. Mathematically-inclined analytic engineers and physicists work closely with those having extensive knowledge of equipments to solve problems in the analysis and evaluation of complex systems. Laboratory facilities are provided for the design and development of special equipment items as required. There is a large measure of interaction between our engineers, Human Factors, and data-processing people in the accomplishment of system studies. Diverse backgrounds, required by the broad scope of SDC tasks, range through communications, networks, computer design and logic, display systems, weapons systems, data-processing equipment, mechanical design, and applied physics. Engineering at SDC offers the opportunity to acquire a working knowledge of computer program formulation.

OPERATIONS AND MANAGEMENT RESEARCH: This professional staff analyzes and evaluates large-scale military, governmental and industrial systems and conducts research into management operations. It analyzes system requirements, establishes system objectives, states problems, examines possible solutions, and determines the most practical solution. Mathematical models are also created to arrive at conclusions about the system in reality. Operations and Management Research is challenging work for mathematicians, as well as trained specialists in the field of operations research. Most of the staff have strong mathematical backgrounds and an interest in quantitative analysis through modelling of real-world events. Their areas of special interest include mathematical statistics, operational gaming, linear programming, logistics, information theory, queuing theory, analytical system simulation, systems analysis, and cost and effectiveness studies.

HOW WORK IS HANDLED: Performance of contractual operations is the responsibility of Departments and Divisions within the corporation. It is here that the day-to-day work is done.

SAGE Computer Programming (SCP)

The functions of SAGE Computer Programming are divided among three departments: The SCP Development Department, Design Department, and Production and Installation Department.

THE SCP DEVELOPMENT DEPARTMENT secures and analyzes data on all the elements that must be considered as parts of the SAGE System. It then specifies what the final computer program for the System should include and how it should operate.

THE SCP DESIGN DEPARTMENT takes the specifications submitted by the Development Department, adds information from outside sources, and converts the assembled information into a prototype program, eliminating problems that could not have been anticipated by the Development Department.

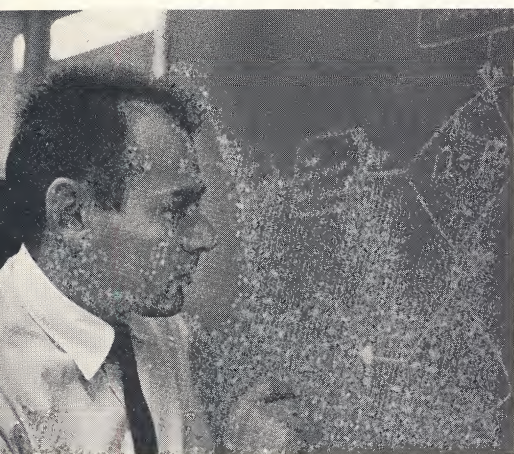
THE SCP PRODUCTION AND INSTALLATION DEPARTMENT produces and installs the finished SAGE program. It maintains a large field staff that performs SAGE-site installation, modifies the programs in accordance with local variations in equipment, terrain, and the like, and maintains the programs at the sites. Feedback from the field staff to SDC's main office results in continual improvements and sophistications in system operation. The Production and Installation Department also operates the SAGE computer installation at Santa Monica.

System Training (ST)

Our ST Operations Department and ST Production Department are responsible for administering the System Training Program. Each has several branches.

THE ST OPERATIONS DEPARTMENT develops the basic techniques for the training program, designs the training exercises, and maintains representatives at all air-defense sites to provide technical and training support and to assemble data for the improvement and modification of existing exercises.

THE ST PRODUCTION DEPARTMENT is responsible for producing thousands of training aids and other physical components that are part of the field training exercises. Here, psychologists develop methods for producing training aids, engineers design simulation equipment, programmers



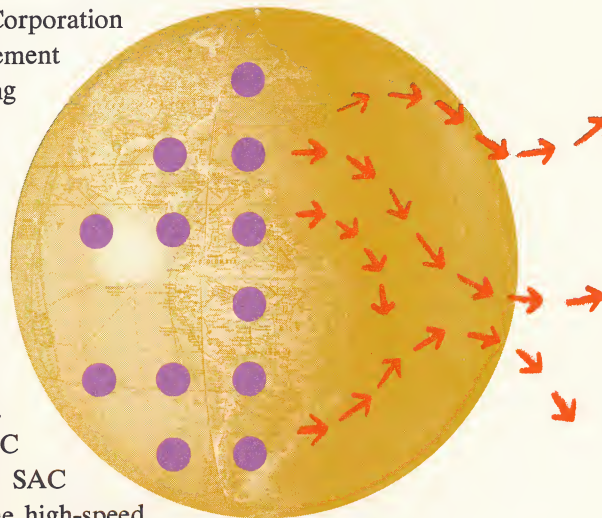
produce computer-generated training aids and other components, and specialists in air-defense information maintain realism in the simulation packages. Their work extends into every field of activity at SDC.

Strategic Air Command Control System Division (SACCS)

SDC participates with International Electric Corporation in the overall development and constant improvement of the SAC Control System. A rapidly expanding part of our total effort, this new system will continually inform Strategic Air Command Headquarters of the readiness and weapons status of each SAC base and the location and capability of every SAC bomber. SACCS will also supply up-to-the-minute information on weather conditions throughout the world, as well as on the potential enemy's major troop and plane movements and the location of all his critical facilities. As a participant in the development of the SAC Control System, we provide system analysis of SAC operations and design and write programs for the high-speed digital computers that process information received from SAC bases. SDC also applies simulation techniques and other aspects of man-machine system technology to major components of the system. In addition, we develop system training programs and operating instructions for the SAC Control System.

Special Development Department

Our Special Development Department plans, schedules, and administers projects that are outside the scope of established contracts and beyond the normal work category of any of the other Departments or Divisions because of the projects' size, nature, or duration. The people in this Department represent almost all the skills in our company. An example of their work is a study being conducted for the Federal Aviation Agency (FAA) of joint operation of the air traffic control facility and SAGE Air Defense Direction Center located at Albuquerque, New Mexico. When a project assigned to Special Development becomes large enough, it is separated from the Department and established as a new department or division. This procedure enables us to handle efficiently multiple contracts of varied nature.



BENEFITS: The man or woman whose professional interests are broad, flexible, and system-oriented will find a career at SDC stimulating and fascinating, as well as personally rewarding.

Liberal employee benefits are an added attraction. All of us receive free life-insurance policies and medical-surgical coverage. Our retirement plan is designed to provide a hedge against deflation as well as inflation. Credit Union savings plans are also offered. In addition, an educational assistance program is available for qualified personnel who wish to advance their professional stature. The program provides for payment of tuition fees and the cost of thesis preparation, among other expenses associated with approved courses.

All of us are given a month's paid vacation per year from the start, as well as the normal paid holidays and a reasonable amount of sick leave. Most professional people also accrue, after their first year with the company, sabbatic pay equal to 5% of their annual salary, payable above regular vacation pay at the time the vacation is taken.

The area in which we are located is one of the most attractive places in the country in which to live and work. Beautiful residential suburbs are within ten minutes' drive of our headquarters building, while freeways bring mountains and desert within an hour or two of our doorstep. Miles of beaches are only 15 minutes away. Sea breezes provide a refreshing atmosphere year-round for work and play, and such famous attractions as Disneyland and Marineland are within easy driving distance. Climate and surroundings are ideal for healthful, happy family living such as can be found only in Southern California.



*Growth of computer-based control systems
assures continuing opportunities at SDC.*

*We'd like to tell you more about them
and how they tie in with your future here.*

*Drop a line to our Personnel Department,
System Development Corporation,
2500 Colorado Avenue, Santa Monica, California,
and we'll set up an appointment
to see you in person.*

